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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,118	12/21/2001	Darren L. Anand	FIS9-2001-0253-US1	4954

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EXAMINER

PHAM, LY D

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,118

Applicant(s)

ANAND ET AL

Examiner

Ly D Pham

Art Unit

2818

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

FINAL ACTION

DETAILED ACTION

1. Applicants' amendment A has been entered in Office Paper No. 5.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4, 6, 8, 9, 12, 14, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Dono et al. (US Pat Pub 2002/0015328 A1).

Regarding **claims 1 and 9**, Dono et al. disclose a multibank DRAM macro (fig. 1), said macro comprising:

- (a) a plurality of DRAM memory banks (fig. 1, banks 1, 2, 3, etc...), each bank respectively comprising:
 - (i) an array of DRAM memory cells (fig. 1, each bank includes an array),
 - (ii) bitlines and wordlines, respectively defining columns and rows of the array (paragraph 0045),
 - (iii) a row address decoder circuit (fig. 1, row decoder 14),
 - (iv) a column address decoder circuit (fig. 1, column decoder 13),

- (v) dedicated spare rows and columns for redundancy (paragraph 0002);
- (b) a bank select input for each respective bank, each bank input controlling operation of its respective bank (paragraph 0058, "...a selected bank of the memory array is designated by the bank address BA at that time, and a selection bit line (column) is designated by the column address CA.").
- (c) a data path receiver/driver shared by at least two banks (fig. 1 data I/O circuit 19 provides Input Output paths shared by the memory banks 1, 2, 3, etc...).

Regarding **claims 4 and 12**, Dono et al. further shows the DRAM macro of claim 1, wherein said macro further comprises a write enable input (page 5, table 1, write enable WE)

Regarding **claims 6 and 14**, Dono also shows that each memory bank further comprises at least one sense amplifier (fig. 1, 15).

Likewise for **claims 8 and 16**, Dono et al. show an exemplary DRAM macro, which comprises 4 of said banks (fig. 1, memory array SDRAM) as claimed in claims 7 and 15, respectively.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 – 3 and 10 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dono et al. as applied to claim 1 above, and further in view of Yamaguchi (US Pat 6,067,632).

Regarding **claims 2 – 3 and 10 – 11**, although Dono et al. did not further disclose a multibank DRAM macro with a master select input, wherein the bank select inputs are latched to a falling edge of a signal from said master select input. Nevertheless, Yamaguchi has shown this feature in his invention (col. 13, lines 39 – 45). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to include the claimed feature so that circuit size can be made small (col. 13, lines 46 – 57).

6. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dono et al. as applied to claim 1 above, and further in view of Jeddeloh et al. (US Pat 6,430,742).

Regarding **claims 5 and 13**, although Dono et al. did not show the DRAM macro of claim 1 further comprises a page mode select input, Jeddeloh et al. however has illustrated this feature (col. 3, lines 8 – 19). Therefore, it would have been obvious to one of ordinary skill in the art, to combine the page mode feature to the DRAM structure of Jun and Dono so that fast memory transfer for a large segment of data can be obtained.

7. Claims 7 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Dono et al.

Regarding **claims 7 and 15**, the examiner takes an Official Notice that although Dono et al. did not clearly show that each bank of the DRAM macro has a capacity of about 1MB, it is however considered a design choice for a DRAM array to have a size according to any desired specification and 1 MB can be one instance.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

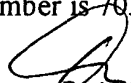
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly Pham, whose telephone number is 703-305-4862. The examiner can normally be reached on Monday – Friday from 8:30am to 5:00pm, alternate Friday off. The examiner's supervisor, David Nelms, can be reached at 703-308-4910. The fax number for the organization where this application or proceeding is assigned is 703-308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Ly Pham



April 14, 2003



David Nelms
Supervisory Patent Examiner
Technology Center 2800